



13281 U.S. PTO  
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## SAMPLING OF COMBINED (TANGLED) ELECTRIC NEAR FIELDS

### IN HYBRID AND DIS IGNITIONS

#### CROSS REFERENCE TO RELATED APPLICATIONS

**[0001]** This application claims priority from and is related to U.S. Provisional Application No. 60/463,310, filed April 17, 2003, entitled “HYBRID COP SAMPLING OF COMBINED (TANGLED) ELECTRIC FIELDS”, by inventors Kenneth A. McQueeney and David G. Capitolo, (Attorney Docket No. 66396-032). The contents of the provisional application are hereby incorporated by reference in its entirety.

#### BACKGROUND

##### *Field*

**[0002]** This patent application is directed to the field of ignition coils. It is more specifically directed to a capacitive-coupled sensor for hybrid ignition coils and more particularly to such probe configured for placement in electric near fields proximate a hybrid ignition coil as a means of sensing the signals that are delivered to spark plugs by the coil.

##### *Description of Related Art*

**[0003]** Ignition coils are commonly used in internal combustion engines to boost a low voltage supply voltage to the very high voltage level that is necessary to initiate and sustain a spark across a spark plug gap of a spark plug. The spark ignites a fuel-air mixture in an associated engine cylinder, causing increased pressure in the cylinder which produces movement of a piston within the cylinder. Historically, a single ignition coil was used in combination with a distributor to supply the high voltage needed by the spark plugs. The distributor was connected